PASSAGE BEHAVIOR AND SURVIVAL FOR YEARLING CHINOOK SALMON, STEELHEAD, AND FALL CHINOOK PASSING ICE HARBOR DAM DURING TWO SPILL TREATMENTS, 2008

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ABSTRACT

In 2008, we evaluated behavior, passage distributions, and survival of yearling Chinook salmon, steelhead, and fall Chinook salmon at Ice Harbor Dam on the Snake River to further ascertain effects of the recently installed removable spillway weir (RSW). Fish were collected, PIT tagged, and surgically tagged with a radio transmitter at Lower Monumental Dam. Project operations at Ice Harbor Dam were intended to consist of 2-d random blocks alternating between a reduced spill treatment (~30%) and a BiOp spill utilizing 45 kcfs during the day and gas cap at night. However, 2008, was a high flow year, resulting in involuntary spill levels exceeding prescribed treatment levels. As a result, we did not achieve a reasonable comparison between the two treatments, so results were pooled.

Because of the high flows, the proportion of total river flow through the RSW during spring operations decreased from 11% in 2007 to 7% in 2008, although RSW discharge remained the same during both years at 8 kcfs, due to minimum operating pool level. During the fall Chinook outmigration, the RSW spill proportion dropped from 21% in 2007 to 8% in 2008. As a result, fish passage through the RSW decreased dramatically for yearling Chinook salmon (22%), juvenile steelhead (20%), and fall Chinook (31%), due to more fish being drawn toward the training spill and powerhouse flows.

Survival estimates remained high and relatively consistent with estimates from the previous two years of evaluation for yearling Chinook, steelhead, and fall Chinook.